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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,071	06/15/2006	Takayuki Takeuchi	10873.1909USWO	9144

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EXAMINER	
BREVAL, ELMITO	
ART UNIT	PAPER NUMBER
2889	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/583,071	TAKEUCHI ET AL.	
	Examiner	Art Unit	
	ELMITO BREVAL	2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 October 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3 and 5-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3 and 5-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed on 10/13/2009 has been entered.

Response to Arguments

Applicant's arguments filed 10/13/2009 have been fully considered but they are not persuasive. The applicant has made two arguments: (1) Iechi et al., (US. Pub: 2003/0213952) does not teach or suggest a thin film transistor and a display element unit that are laminated on a substrate in this order as required by claim 1; (2) there is no motivation to combine the Iechi's reference with Arai et al., (JP: 07-297406).

In response to the first argument: prior to the amendment of claim 1, Iechi teaches (at least fig. 2; abstract) an organic transistor capable of emitting light at high luminescence efficiency laminated on a substrate (11) in the same order as claimed by applicant except for expressly discloses that the drain electrode has an area larger than that of the source electrode so as to cover the active layer on the source electrode entirely; for instance, Iechi teaches (in at least fig. 2) a transparent drain electrode (12; i.e. the pixel electrode) formed on a substrate side; a source electrode (15) opposed to the drain electrode; and an organic semiconductor layer (13; i.e. the active layer) interposed between the drain and the source electrode. Therefore, Iechi did teach a thin film transistor unit and a display element unit that are laminated on a substrate in the order as claimed by the applicant.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention

where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to form the pixel electrode or drain electrode with a larger area than the source electrode is known to one of ordinary skill in the art, and also could be found in Arai (abstract).

Note: one of ordinary skill in the art would easily contemplate of substituting the drain electrode in the substrate side with area larger than the source electrode of Arai in the device of Iechi for the purpose of increasing amount of current flow without increasing the element dimension of the device; also, that would reduce manufacturing cost of the device because as the dimension of the device increases, the cost of manufacturing would also increase.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 5, and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iechi et al., (US. Pub: 2003/0213952) of record in view of Arai et al., (JP: 07-297406) of record in further view of Carcia et al., (US. Pub: 2003/0164497).

Regarding claim 1, Iechi ('952) teaches (in at least fig. 2) a display apparatus in which a pixel is driven by using a thin film transistor including an organic material in at least an active layer, wherein the thin film transistor unit and a display element unit are laminated on substrate in this order, a transparent drain electrode (12; i.e. the pixel electrode) formed on a substrate side; a source electrode (15) opposed to the drain electrode; and an organic semiconductor layer (13; i.e. the active layer) interposed between the drain and the source electrode.

However, Iechi ('952) does not teach the drain electrode has an area larger than that of the source electrode so as to cover the active layer on the source electrode entirely, and a conductive film for suppressing gas permeation of gas and moisture that is formed outside of the display element unit.

Further regarding claim 1, Arai ('406) teaches (abstract) a thin film semiconductor device comprised of, in part, drain electrodes (11, 12; i.e. pixel electrodes) formed on the substrate (10), and a source electrode (14) opposed the drain electrodes; wherein the drain electrodes have an area larger than the source electrode for the purpose of having a device with increase amount of current flow without increasing the element dimension of the device and to improve the luminance efficiency of the device, but silent about a conductive film for suppressing gas permeation and moisture is formed outside of the display element unit.

Further regarding claim 1, Carcia ('497) teaches (in at least fig. 2) a flexible organic electronic device with improved resistance to oxygen and moisture degradation, wherein a conductive film (22, 62; i.e. the barrier layers; see [0044]; note: the barrier

layers are made of materials such as aluminum, copper, nickel, tin, inorganic oxides, indium etc…) for suppressing gas permeation and moisture is formed outside of the display unit; and also that would improve the durability of the device.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to contemplate of using the drain electrode area structures of Arai in the device of Iechi to cover the active layer on the source electrode substantially entirely for the purpose of having a device with increase amount of current flow without increasing the element dimension of the device and to improve the luminance efficiency of the device, and to further modify the device of Iechi with the barrier layers (i.e. the conductive film) of Carcia for the purpose of suppressing gas permeation and moisture in the device.

Regarding claim 5, Iechi ('952) teaches (in at least fig. 2) the transparent electrode (12) covers an entire surface of the display region.

Regarding claim 6, Iechi ('952) teaches (in at least fig. 2) the substrate (11) suppresses gas permeation of oxygen and moisture.

Regarding claim 7, Iechi ('952) teaches the substrate is selected from plastic ([0054]).

Regarding claim 8, Iechi ('952) teaches the display element unit is an organic electroluminescent element.

Regarding claim 9, Iechi ('952) teaches (in at least fig. 2) the thin film transistor includes an organic semiconductor layer (13).

Regarding claim 10, Arai ('406) teaches (in abstract) the drain electrode has an area larger than that of the source electrode. The reason for combining is the same as for claim 1.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iechi et al., (US. Pub: 2003/0213952) of record in view of Morita et al., (JP: 2003-084686) of record in further view of Carcia et al., (US. Pub: 2003/0164497).

Regarding claim 1, Iechi ('952) teaches (in at least fig. 2) a display apparatus in which a pixel is driven by using a thin film transistor including an organic material in at least an active layer, wherein the thin film transistor unit and a display element unit are laminated on substrate in this order, a transparent drain electrode (12; i.e. the pixel electrode) on a substrate side; a source electrode (15) opposed the drain electrode; and an organic semiconductor layer (13; i.e. the active layer) interposed between the drain and the source electrode.

However, Iechi ('952) does not teach the drain electrode has an area larger than that of the source electrode so as to cover the active layer on the source electrode entirely, and a conductive film for suppressing gas permeation and moisture is formed outside of the display element unit.

Further regarding claim 1, Morita ('686) teaches ([0017]) a display device comprised of, in part, a drain electrode with area (W1) greater than the source electrode area (w2) for the purpose of increasing the current flow and to improve the luminance efficiency of the device, but silent about a conductive film for suppressing gas permeation and moisture is formed outside of the display element unit.

Further regarding claim 1, Carcia ('497) teaches (in at least fig. 2) a flexible organic electronic device with improved resistance to oxygen and moisture degradation, wherein a conductive film (22, 62; i.e. the barrier layers; see [0044]; note: the barrier layers are made of materials such as aluminum, copper, nickel, tin, inorganic oxides, indium etc...) for suppressing gas permeation and moisture is formed outside of the display unit.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to contemplate of using the drain electrode structure of Morita into the device of Iechi for the purpose of increasing the current flow and to improve the luminance efficiency of the device, and to further modify the device of Iechi with the barrier layers (i.e. the conductive film) of Carcia for the purpose of suppressing gas permeation and moisture in the device; also that would improve the durability of the device.

Regarding claim 3, Morita ('686) teaches ([0026]) the current amount per unit area can be made optimal structure to enlarge by increasing an electrode with the larger effective channel width (i.e. drain electrode/or pixel) 2.5 times from 1.2 times of the width of the electrode with smaller effective channel width (i.e. the source electrode; thus, it is considered from Morita's disclosure the source electrode does have an area not less than 25% of the size of the pixel electrode/drain). The reason for combining is the same as for claim 1.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELMITO BREVAL whose telephone number is (571)270-3099. The examiner can normally be reached on M-F (8:30 AM-5:00 Pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Toan Ton can be reached on (571)-272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

February 1, 2010
/Elmito Breval/
Examiner, Art Unit 2889

/Bumsuk Won/
Primary Examiner, Art Unit 2889